Montana Department of Natural Resources and Conservation
Water Resources Division
Water Rights Bureau

ENVIRONMENTAL ASSESSMENT
For Routine Actions with Limited Environmental Impact

Part I. Proposed Action Description

1. Applicant/Contact name and address: Montana Prairie Nest II
527 Prairie Nest Road
Great Falls, MT 59405

2. Type of action: Application for Change of Appropriation Water Right 41Q 30071031

3. Water source name: Groundwater (Madison Group)

4. Location affected by project: The point of diversion (well) is located in the SWNWSE Section 6, Twp 20N, Rge 6E, Cascade County, and the place of use is proposed to be changed to consist of 2,234 acres located in Sections 5, 6, 7, and 8, Twp 20N, Rge 6E; and Sections 28, 29, 30, 31, 32, and 33, Twp 21N, Rge 6E.

5. Narrative summary of the proposed project, purpose, action to be taken, and benefits:

The Applicant proposes to change/expand the place of use of this unperfected permit from 892 acres to 2,234 acres. The expansion of acres irrigated is proposed in conjunction with a permit application (41Q 30068688) submitted by the Applicant on July 22, 2014, to appropriate a greater flow rate (70 GPM) and volume of water (112.9 AF) than what was initially permitted under this water right. The proposal includes a change in irrigation methods from center pivot to drain tile subirrigation.

The DNRC shall issue a change authorization if an applicant proves the criteria in 85-2-402 MCA are met.

6. Agencies consulted during preparation of the Environmental Assessment:
(include agencies with overlapping jurisdiction)

- Dept. of Environmental Quality Website – TMDL 303d listing
- MT. National Heritage Program Website – Species of Concern
- USDI Fish & Wildlife Service Website – Endangered and Threatened Species
- USDA Natural Resources Conservation Service – Web Soil Survey
- USDI Fish & Wildlife Service – Wetlands Online Mapper

Part II. Environmental Review

1. Environmental Impact Checklist:

PHYSICAL ENVIRONMENT

WATER QUANTITY, QUALITY AND DISTRIBUTION

Water quantity *- Assess whether the source of supply is identified as a chronically or periodically dewatered stream by DFWP. Assess whether the proposed use will worsen the already dewatered condition.*

Determination: No significant impact.

The source of water is Madison Formation groundwater; the source is not identified as a chronically or periodically dewatered stream by DFWP. The recharge areas for the Madison are the Little Belt Mountains. The source aquifer discharges through fractures and springs along the Missouri River, including Giant Springs, near Great Falls, Montana. Giant Springs is estimated to discharge up to 600 cubic feet per second (cfs). This permit has not yet been perfected and the permitted flow rate and volume will not be changed. Further, the Applicant has agreed to mitigate the entire groundwater depletion through a water service contract from the USDI Bureau of Reclamation (BOR), which is already in place. The Applicant agrees to purchase 564.6 AF of water which will be released from Canyon Ferry Reservoir to the Missouri River to offset depletions to springs contributing to the river and no adverse impacts to surface water quantity are anticipated.

Water quality *- Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.*

Determination: No significant impact.

The adjacent drainage area is known as Rogers Coulee and it is not currently listed as impaired or threatened by the MT DEQ. Rogers Coulee is a tributary of Belt Creek. The reach of Belt Creek that Rogers Coulee empties into is identified as *Big Otter Creek to the mouth of the Missouri River*. This stretch of Belt Creek has been designated as requiring a TMDL Plan. The 2014 303d listing shows no beneficial uses are supported and identifies multiple impairments resulting from acid drainage associated with abandoned mine activities. Other impairments include sedimentation, siltation, anthropogenic substrate alterations, and stream-side or littoral vegetative cover alterations. The source of water for this appropriation is Madison Formation groundwater and as such, this project should not have significant impacts to surface water quality.

Groundwater *- Assess if the proposed project impacts ground water quality or supply. If this is a groundwater appropriation, assess if it could impact adjacent surface water flows.*

Determination: No significant impact.

As discussed above, this change proposes to expand the originally permitted water right's place of use and change the irrigation method. No increase in the flow rate or amount of water is proposed. The Madison Aquifer is considered to be hydraulically connected to the Missouri River and Giant Springs. Madison groundwater withdrawals from this well could affect flows in these sources. As mentioned above, the Applicant has agreed to mitigate the entire groundwater depletion via a water service contract from the USDI BOR. No significant impacts to groundwater quantity or quality are expected because of this project if the Applicant continues to purchase water from the USDI BOR to mitigate groundwater depletions to the Missouri River.

DIVERSION WORKS - *Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.*

Determination: No significant impact.

Water will be appropriated by a groundwater well completed into the Madison Aquifer at a depth of 800 feet. This unperfected permit will be used in conjunction with a recently submitted application (41Q 30068688). Water from the well will be pumped at a maximum combined flow rate of 420 gpm to an existing reservoir which has a capacity of 1,405.8 AF. A separate pumping system will be used to divert water from the reservoir to a sub-irrigation system which will consist of a network of drain tiles. The diversion is not expected to have a significant impact to stream channels, barriers, riparian areas, dams, or other wells. There could be a minor impact to springs contributing flows to the Missouri River as a result of groundwater withdrawals from the Madison Aquifer. The water service contract from the USDI BOR is expected to mitigate depletions to the Missouri River.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species - *Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."*

Determination: No Significant Impact.

The Montana National Heritage Program lists the Greater Short-horned Lizard as Species of Concern within Twp 20N Rge 6E and Twp 21N Rge 6E. The website lists the Bald Eagle as a Special Status Species. No Plant Species of Concern are listed in the area of interest.

The USDI Fish & Wildlife Service Website shows that Cascade County has four species listed as threatened or as candidates for the Endangered Species Act. The threatened species are the Canada Lynx and Red Knot; the candidate species are the Sprague's Pipit and the Whitebark Pine.

This project is not expected to impact any species mentioned above as the project will be located on land that has been previously disturbed by past agriculture practices. Further, the reservoir

involved in this application process has been in existence for many years and is presumed to benefit many different species of plants and animals.

Wetlands *- Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.*

Determination: No Significant Impact.

The National Wetlands Inventory does show a few freshwater emergent type wetlands in the previously farmed area. However, review of a 2013 aerial photograph does not confirm any evidence of these wetlands. This development is not expected to cause any adverse impacts to wetland areas.

Ponds *- For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.*

Determination: No Significant Impact.

The project may cyclically fluctuate water levels in the existing reservoir used to regulate water pumped from the well for the proposed sub-irrigation system. It is presumed this reservoir will benefit many species of wildlife/waterfowl using the area.

GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE - *Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.*

Determination: No significant impact.

The USDA-NRCS Web Soil Survey indicates the dominant soil units for the area are Lawther silty clay and Gerber silty clay loam. These soil units are classified as farmlands of statewide importance, however they could have severe limitations that restrict the choice of plants and/or that require careful management. The sodium adsorption ratio is 0.0 indicating a low likelihood of impacts from saline seep.

It is expected that some short-term surface disturbance and erosion will occur when the irrigation system is installed. Long-term effects (erosion, salinity, etc.) will depend on management; however no significant effects to the soil profile are anticipated because of this project.

VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS - *Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.*

Determination: No Significant Impact

Other than short-term disturbances from the installation of the irrigation system, no new impacts to vegetative cover are expected. The areas proposed to be sub-irrigated have been previously used for agriculture purposes. It is the land owner's responsibility to control noxious weeds on their property:

AIR QUALITY - *Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.*

Determination: No Significant Impact

No impacts to air quality are expected since both the pump in the well and the reservoir pump will be powered by electric motors.

HISTORICAL AND ARCHEOLOGICAL SITES - *Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project if it is on State or Federal Lands. If it is not on State or Federal Lands simply state NA-project not located on State or Federal Lands.*

Determination: No Significant Impact

Not Applicable – The proposed project is not located on State or Federal Lands.

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY - *Assess any other impacts on environmental resources of land, water and energy not already addressed.*

Determination: No Significant Impact

No significant impacts are expected. There will be some electrical energy consumption increase from the pumps involved with the proposed sub-irrigation system. There will also be some soil disruption from installing the sub-irrigation system. Although there will be some evaporative loss associated with water temporarily stored by the reservoir, the proposed system has the potential to be a very efficient irrigation method. This depends primarily on proper design, installation, and management.

HUMAN ENVIRONMENT

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS - *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

Determination: No Significant Impact

No local environmental plans or goals have been identified.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES - *Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.*

Determination: No Significant Impact

The proposed action is not expected to negatively affect recreational or wilderness activities in the area.

HUMAN HEALTH - *Assess whether the proposed project impacts on human health.*

Determination: No Significant Impact

No impacts to human health are expected.

PRIVATE PROPERTY - *Assess whether there are any government regulatory impacts on private property rights.*
*Yes___ No_**X**__ If yes, analyze any alternatives considered that could reduce, minimize, or eliminate the regulation of private property rights.*

Determination: No Significant Impact

OTHER HUMAN ENVIRONMENTAL ISSUES - *For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.*

Impacts on:

(a) *Cultural uniqueness and diversity?* None

(b) *Local and state tax base and tax revenues?* Increased tax base for irrigated land.

(c) *Existing land uses?* "Dry land" agriculture will be converted to irrigated land.

(d) *Quantity and distribution of employment?* The initial installation of the system may be labor intensive and may open up temporary employment opportunities. After the system is installed however the manual labor requirement to operate the sub-irrigation system is expected to be similar to operating a center pivot.

(e) *Distribution and density of population and housing?* None

(f) *Demands for government services?* None

(g) *Industrial and commercial activity?* None

(h) *Utilities?* New pumps will be powered by electric motors.

(i) *Transportation?* None

(j) *Safety?* None

(k) *Other appropriate social and economic circumstances?* None

2. *Secondary and cumulative impacts on the physical environment and human population:*

Secondary Impacts:

Secondary impacts from this project are expected to be minor. This is because groundwater withdrawals from the Madison Aquifer and, in turn, depletions to the Missouri River will be mitigated with a water service contract from Canyon Ferry Reservoir administered by the BOR.

Cumulative Impacts:

The same 800 feet well will be used for this unperfected permit and a recently submitted application (41Q 30068688). According to the Department's Aquifer Test Report for the permit application, there are currently 16 water rights completed in the Madison Formation within the zone of influence (ZOI) and their calculated groundwater legal demand totals 784.8 AF per year. Physical availability calculations for the ZOI exceed the legal demands by 321.2 AF annually. Current withdrawals authorized from Giant Springs are relatively small when compared to the flow of the springs. As more development occurs in the area, there will be increasing demands for water for domestic, irrigation, stock, and other beneficial uses. The increased demand will eventually result in a higher potential for significant impacts to the flows at Giant Springs and the Missouri River.

3. *Describe any mitigation/stipulation measures:*

The Department may or may not deem specific conditions necessary to meet the statutory criteria for new permits set forth at § 85-2-402, MCA. These conditions would be required in the Departments' preliminary determination, if applicable.

4. *Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider:*

No action alternative: Deny the permit application. This alternative would result in no benefits to the Applicant from the proposed irrigation system.

PART III. Conclusion

1. Preferred Alternative

The preferred alternative is the proposed alternative.

2 Comments and Responses

To date, none received.

3. *Finding:*
*Yes___ No_**X**_ Based on the significance criteria evaluated in this EA, is an EIS required?*

If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:

None of the identified impacts for any of the alternatives are significant as defined in ARM 36.2.524.

Name of person(s) responsible for preparation of EA:

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Title: Water Resource Specialist
Date: July 13, 2015